U.S. patent application serial number 09/138,456, filed on August 21, 1998, and entitled "3D Graphics in a Single Logical Screen Display Using Multiple Remote Computer Systems," which is incorporated herein by reference, describes an SLS system of networked computer stations that may be used to render two-dimensional (2D) and three-dimensional (3D) graphical data. In the embodiments described by the foregoing patent application, X Protocol is generally utilized to render 2D graphical data, and OpenGL Protocol (OGL) is generally used to render 3D graphical data.

Although it is possible to render 2D and/or 3D data in conventional computer graphical display systems, including SLS environments, there exists limitations that restrict the performance and/or image quality exhibited by the conventional computer graphical display systems. More specifically, high quality images, particularly 3D images, are typically defined by a large amount of graphical data, and the speed at which conventional graphics pipelines 36-39 can process the graphical data defining an object is limited. Thus, a trade-off often exists between increasing the quality of the image rendered by a computer graphical display system and the speed at which the image can be rendered.

SUMMARY OF THE INVENTION

Briefly described, the present invention relates to a system and method for configuring a plurality of networked slave computers to cooperate to collectively render a display. An embodiment of the method operates by specifying, at a master computer, compatible operating configuration for each of the plurality of computers, and communicating, across the network, the specified configuration to each of the plurality of slave computers.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention can be better understood with reference to the following drawings. The elements of the drawings are not necessarily to scale relative to each other, emphasis instead being placed upon clearly illustrating the principles of the invention. Furthermore, like reference numerals designate corresponding parts throughout the several views.

FIG. 1 is a block diagram illustrating a conventional graphical display system.

FIG. 2 is a block diagram illustrating a conventional single logical screen (SLS) graphical display system.

FIG. 3 is a block diagram illustrating a graphical display system in accordance with the present invention.

FIG. 4 is a block diagram illustrating a more detailed view of a client depicted in FIG. 3.

FIG. 5 is a block diagram illustrating a more detailed view of a master pipeline depicted in FIG. 3.

FIG. 6 is a block diagram illustrating a more detailed view of a slave pipeline depicted in FIG. 3.

FIG. 7 is a diagram illustrating a more detailed view of a display device depicted in FIG. 3. The display device of FIG. 7 is displaying an exemplary X window having a center region for displaying three-dimensional objects.

FIG. 8 is a diagram illustrating the display device depicted in FIG. 7 with the center region partitioned according to one embodiment of the present invention.

FIG. 9 is a diagram illustrating the display device depicted in FIG. 7 with the center region partitioned according to another embodiment of the present invention.

FIG. 10 is a diagram illustrating the display device depicted in FIG. 8 with a three-dimensional object displayed within the center region.

FIG. 11 is a diagram illustrating the display device depicted in FIG. 7 when super sampled data residing in one of the frame buffers interfaced with one of the slave pipelines is displayed within the center region of the display device.

FIG. 12 is a diagram illustrating the display device depicted in FIG. 11 when super sampled data residing in another of the frame buffers interfaced with another of the slave pipelines is displayed within the center region of the display device.

FIG. 13 is a block diagram illustrating another embodiment of the graphical display system depicted in FIG. 3.

FIG. 14 is a single logical screen (SLS) graphical display system that utilizes a graphical acceleration unit depicted in FIG. 3 or FIG. 13.

FIG. 15 is a diagram illustrating a more detailed view of display devices that are depicted in FIG. 14.

FIG. 16 is a diagram illustrating certain principal components of the system 300 constructed in accordance with one embodiment of the invention.

FIG. 17 is a diagram illustrating certain principal components of a system constructed in accordance with an alternative embodiment of the present invention.

FIG. 18 is a diagram that illustrates certain hardware components of the system of FIGS. 16 and 17 in more detail;

FIG. 19 is a flowchart illustrating the top-level operation of a system constructed in accordance with the invention;

FIG. 20 is a flowchart illustrating the top-level operation of the "Read Configuration File" step illustrated in FIG. 19.

FIG. 21 is a flowchart illustrating the top-level operation of the "Configure Graphics Node Devices" step illustrated in FIG. 19.